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Practical Aspects of the Low Sodium Diet

Prepared by a Committee of the San Francisco Heart Association*

EDEMA fluid is essentially an isotonic solution of salt and water. In order to maintain this normal concentration of sodium, any physiological disturbance resulting in a retention of sodium results in a corresponding retention of water. Conversely, whenever there is a retention of water, sodium is retained in order to preserve isotonicity. This relationship depends on normal renal function and fails when the kidney is unable to maintain the normal sodium concentration.

The fundamental objective in the use of a diet low in sodium is the reduction of interstitial and subcutaneous fluid. When an edematous state exists, the reduction of sodium intake sufficient to create a negative sodium balance results in diuresis with consequent decrease in accumulated sodium and water. Furthermore, when the bodily tendency to produce edema exists, the actual retention of sodium may be prevented or diminished by limiting the amount of sodium available to the body. The amount of sodium restriction required varies from case to case and from time to time in the individual case; it depends in part on the previous sodium intake of the patient and the severity of the disease process. In cardiac failure of mild degree, for instance, usually only moderate restriction of sodium is required. In nephrosis, however, rigid restriction of sodium intake to 300 mg. or less per day may be necessary, since many patients with nephrosis excrete practically no sodium in the urine. Any sodium given in the diet, therefore, will be retained with an equivalent amount of water, thus aggravating the edema.

In edema, it is the sodium ion and not the chloride ion which must be withheld from the patient. When the term "salt" is used, as in "low salt diet," it is important to remember that sodium is meant. Pfeiffer in 1911 demonstrated that retention of fluid in edematous states occurred with both sodium bicarbonate and sodium chloride, but did not occur with ammonium chloride or potassium chloride. In fact, slight diuresis occasionally occurred with the latter two substances.

DEGREES OF SODIUM RESTRICTION

The average daily diet contains about 10 gm. of sodium chloride (4 gm. of sodium). Special preferences for highly seasoned food, or the inclusion of large amounts of bread, may double this figure. Mild sodium restriction: 2 to 5 gm. NaCl (0.8 gm. to 2 gm. Na). Moderate sodium restriction: 1 to 2 gm. NaCl (0.4 gm. to 0.8 gm. Na). Rigid sodium restriction: 250 to 1,000 mg. NaCl (100 mg. to 400 mg. Na).

INDICATIONS FOR SODIUM RESTRICTION[3, 4, 5]

I. *Congestive Heart Failure*

Regardless of the mechanism which is ultimately found responsible for the congestive phenomena in cardiac failure, the initial disturbance is failure of

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Free use was made in this study of the "Sodium and Potassium Analyses of Foods and Water," which is available from Mead Johnson and Company. In addition, many determinations were made by the Salt-Free Diet Committee.

Permission to reprint the tables on sodium and potassium in foods and waters was given by Mead Johnson and Company, Evansville, Ind., and the *Journal of American Dietetic Association*, where they were first published, 25:304-314, April 1949.

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EDITORIALS

Medical Education as It Should Be

The American Medical Association performed a master stroke at its recent Cleveland meeting when it announced the appropriation of $500,000 for distribution among the country's medical schools. Immediately the principal sum was announced, individuals and others added several thousands more and the way was left open for further contributions.

Coming at this particular time, the A.M.A. appropriation serves not only as a stimulus to some of the medical schools that have had financial troubles but also as an answer to those critics, in government and out, who have looked askance at the association's opposition to federal funds for medical schools. The most conservative of these critics have considered the A.M.A. as reactionary; the least conservative have charged that by opposing federal grants to medical schools the "medical trust" is attempting to limit the number of new medical graduates and thus build a private economic reserve for present physicians. The absurdity of such charges does not warrant an answer but the propagandists continue their wild accusations.

Those in government know only too well the dictum of the U. S. Supreme Court in its holding that where the federal government contributes funds it must dictate the use of such funds. Translated into terms of federal funds for medical schools, this rule would necessarily imply that the federal government could and must dictate to the medical schools their courses of study, methods of instruction and all other administrative matters; as applied to the students, it could well be twisted into a mortgage on the future services of any physician attending a federally aided medical school.

These are the dangers the medical profession has seen in the proposed granting of government moneys to our medical schools. The entire profession has been well represented by the American Medical Association in its opposition to the federal fund proposal. True, some medical school officials have succumbed to the lure of "free money" because of the expediency of the idea. On the other hand, to the everlasting credit of some deans, there has been a wide area of disapproval of federal money and adherence to the principle that all other sources of funds must first be exhausted before Uncle Sam was allowed to put his finger on our medical schools and our medical students.

The voting of a substantial sum by the A.M.A. sets the ball in motion for the private support of our needy medical schools. It shows that the medical profession can and will take care of its own; it shows that physicians individually and collectively prize their academic freedom and their right to establish their own courses of study on the basis of science and not politics. The doctor is and must be trained to serve his patients, not a government official. To lose that tradition would set medical practice back hundreds of years and would inevitably lead to an even greater measure of federal domination of the profession and of all other phases of American life.

It is fortunate that the A.M.A. funds are coming from the moneys raised for the National Education Campaign. Here is a real boost to education, carried directly to the education of our doctors. The announcement of the appropriation carried the state-

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Council Meeting Minutes

Tentative Draft: Minutes of the 376th Meeting of the Council, San Francisco, November 5, 1950.

The meeting was called to order by Chairman Shipman in Room 220 of the St. Francis Hotel, San Francisco, at 9:30 a.m., Sunday, November 5, 1950.

Roll Call:

Present were President Cass, President-elect MacLean, Speaker Alesen, Vice-Speaker Charnock, Councilors Ball, Crane, Henderson, Dau, Ray, Montgomery, Lum, Pollock, Green, West, Heron, Frees, Thompson, Shipman, Bailey; Secretary Daniels and Editor Wilbur. A quorum present and acting.

Present by invitation were Executive Secretary Hunton, Assistant Executive Secretary Wheeler, Legal Counsel Hassard, Field Secretary Clancy; Dr. D. H. Murray, legislative chairman; Dr. Henry L. Gardner, secretary of California Physicians' Service; Dr. John R. Upton, Blood Bank Commission chairman; Messrs. Clem Whitaker, Jr., Ned Burman and James Dorais of public relations counsel; and county society executive secretaries Waterson of Alameda, Wood of San Mateo, Gillette of Fresno and Tobitt of Orange; Dr. Howard Naffziger, present for a portion of the meeting.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 375th Council meeting, held September 9, 1950, were approved.

2. *Membership:*

(a) A report of membership as of November 3, 1950, was received, showing 10,764 active members.

(b) On motion duly made and seconded, one member whose 1949 dues had been received since the last Council meeting was voted reinstatement.

(c) On motion duly made and seconded, all members whose 1950 dues had been received since the last Council meeting were voted reinstatement.

(d) On motion duly made and seconded in each instance, three applicants were elected to Life Membership. These were: Frank H. Bowles, Alameda County, and Pliny F. Haskell and Clarence A. Johnson, Los Angeles County.

(e) On motion duly made and seconded, Dr. Thomas M. McMillan of San Diego County was elected to Associate Membership.

(f) On motion duly made and seconded, a reduction in dues was voted to seven applicants because of postgraduate study or prolonged illness.

3. *Financial:*

(a) A report showing bank balances as of November 3, 1950, was received and ordered filed.

(b) A report of receipts and expenditures for October and for the four months ended October 31, 1950, was received and ordered filed.

(c) The Executive Secretary reported that all recommendations made by the certified public accountants had been put into effect except the proposal to review the fidelity bonds in effect. On motion duly made and seconded, it was voted to secure a $25,000 total fidelity bond to cover all Association employees, in the head office or elsewhere, and the Association officers whose names appear on bank signature cards.

(d) On motion duly made and seconded, it was voted to establish the level of the Revolving Fund at $35,000, this account now representing a combination of three previous accounts.

(e) On motion duly made and seconded, it was voted to transfer to the Trustees of the California Medical Association the account now carried as the Herzstein Bequest Fund, the transfer to be made January 1, 1951, and the fund to be held as a trust fund by the trustees.

(f) Report was made that New Mexico Physicians' Service had made an additional payment of $500 on its loan, reducing the balance to $13,000.

(g) On motion duly made and seconded, it was voted to put into effect the previous wartime provisions for acceptance of new members in military service without the payment of dues and for pro rata refund of dues to members who enter military service during the calendar year.

4. *Committee on Hospitals, Dispensaries and Clinics:*

On motion duly made and seconded, Dr. Carl Mulfinger was appointed a member of the Committee on Hospitals, Dispensaries and Clinics, to succeed Francis E. Jacobs, deceased.